Amendments to the Specification:

Please replace the paragraph beginning at page 6, line 5 with the following amended paragraph:

In one aspect, decoding an encoded signal (for example, a turbo encoded signal, a block encoded signal or the like) can be performed, e.g., in a wireless communications system, by demodulating the received encoded signal to produce soft information, and iteratively processing the soft information with one or more soft-in / soft-output (SISO) modules. At least one of the SISO modules uses a tree structure to compute forward and backward state metrics, for example, by performing recursive marginalization-combining operations, ~~which may in various embodiments include~~ which in various embodiments includes min-sum operations, min*-sum operations (where min* = min(x,y) − ln(1 + e-|x-y|)), sum-product operations, and/or max-product operations.

Please replace the paragraph beginning at page 47, line 7 with the following amended paragraph:

Fig. 9 shows a representation of a Brent-Kung Tree-SISO in which calculation of the branch metrics in a d=16 sub-window uses a modified version of the Brent-Kung model. There are six pipeline stages in the Brent-Kung Tree-SISO which are indicated by the dotted lines. Nodes ~~shaded gray~~ with hatching represent a 2-way ACS while ~~the black~~ nodes with cross-hatching represent a 4-way ACS.